

Remarks

Claims 1 to 19 are pending. Reconsideration of the application in view of the following remarks is respectfully requested.

I. Claims 11 and 12 are Not Obvious in view of Bruxvoort

Claims 11 and 12 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Bruxvoort (U.S. Pat. No. 5,958,794). Applicants request reconsideration of this rejection because, as acknowledged in the Office Action dated August 20, 2004, Applicants have successfully overcome the rejection of claims 1-10 in view of Bruxvoort when Bruxvoort is not combined with other references. Claims 11 and 12 depend from claim 1. Accordingly, since claim 1 has been found patentable over Bruxvoort, dependent claims 11 and 12 must also be patentable over Bruxvoort and the rejection should be withdrawn.

II. Claims 17 and 18 are Not Obvious in view of Bruxvoort and Chen

Claims 17 and 18 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Bruxvoort in view of Chen (U.S. Pat. No. 6,048,677). Applicants request reconsideration of this rejection because there is no evidence of record indicating that those of ordinary skill would have been properly motivated to combine one of the dispersants reported by Chen into a dispersion taught by Bruxvoort. Further, even if one skilled in the art chose to combine one of the dispersants reported by Chen into a dispersion taught by Bruxvoort, there is no teaching or suggestion in either Chen or Bruxvoort concerning useful dispersant molecular weights or amine values as recited in Applicants' claims.

The Office Action alleges that Chen teaches a coating composition having a binder that can be an acrylate. The Office Action then states "Solsperse 24000 is specifically taught to improve the dispersability of particles ... in the same type of binder utilized by Bruxvoort." The Office Action alleges that one skilled in the art would be "especially motivated" to combine the teachings of Chen with those of Bruxvoort because "Bruxvoort essentially states that the surfactant can be any type of surfactant, so long as it is compatible with the binder precursor and the abrasive particle."

Applicants disagree with the reasoning presenting in the Office Action. Contrary to the Examiner's assertions, the binder reported in Chen is not an acrylate. Rather, the binder reported by Chen is a wax with less than 10% of a non-crosslinked polymer phase additive that may be acrylic (see, e.g., col. 3, lines 31-35). Chen provides no teaching or suggestion that Solsperse 24000 is useful as a dispersant for superabrasive particles in an acrylate binder system. Accordingly, there is no motivation to place one of the dispersants reported by Chen into a dispersion reported by Bruxvoort. For this reason alone, the rejection of claims 17 and 18 in view of Bruxvoort and Chen should be withdrawn.

Further, claims 17 and 18 specify that the dispersant comprise "a polymer having an average molecular weight (Mw) of greater than 500 and an AV of greater than 4.5." Neither Bruxvoort nor Chen teach or suggest these additional criteria for selecting the dispersant. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 17 and 18 under 35 U.S.C. § 103.

III. Claims 1-4 and 7-19 are Not Obvious in view of Bruxvoort and Kamikubo

Claims 1-4 and 7-19 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Bruxvoort in view of Kamikubo (U.S. Pat. No. 5,698,618). Applicants request reconsideration of this rejection because there is no evidence of record indicating that those of ordinary skill would have been properly motivated to combine one of the dispersants reported by Kamikubo into a dispersion taught by Bruxvoort. Further, even if one skilled in the art chose to combine one of the dispersants reported by Kamikubo into a dispersion taught by Bruxvoort, there is no teaching or suggestion in either Kamikubo or Bruxvoort concerning useful dispersant molecular weights or amine values as recited in Applicants' claims.

In considering the combination of Bruxvoort with Kamikubo, the Examiner leaves the abrasive art and turns to the unrelated art of acid-set coating varnishes. Kamkubo reports a coating composition formed from an acid-set coating varnish and pigment composition. The coating composition is reported to excel in color pigment dispersion and have excellent color tone and weather resistance (abstract). The coating composition is suitable for use in a coating for a vehicle (col. 14, lines 65-67). The Office Action characterizes the pigments of Kamikubo as titanium oxide or iron oxide, neither of which is a superabrasive, and asserts, without support,

that the “dispersants taught by Kamikubo are specifically shown to be compatible with the binder and particles utilized in Bruxvoort.”

The role of the pigment reported in Kamikubo is a colorant and the dispersion is used to obtain a desired visual effect in the applied coating. In contrast, Applicants’ claimed invention concerns the abrasive arts and the dispersant is used to disperse superabrasive particles to obtain a desired mechanical effect in the abrasive article. There is simply no teaching or suggestion in Kamikubo concerning the usefulness of a particular dispersant for superabrasive particles. For this reason alone, the rejection of claims 1-4 and 7-19 in view of Bruxvoort and Kamikubo should be withdrawn.

Further, claims 1-4 and 7-19 specify that the dispersant comprise a polymer having a specified average molecular weight and a specified AV. Neither Bruxvoort nor Kamikuba teach or suggest these additional criteria for selecting the dispersant. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-4 and 7-19 under 35 U.S.C. § 103.

IV. Claims 5 and 6 are Not Obvious in view of Bruxvoort and Suzuki

Claims 5 and 6 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Bruxvoort in view of Suzuki (U.S. Pat. No. 5,998,091). Applicants request reconsideration of this rejection because there is no evidence of record indicating that those of ordinary skill would have been properly motivated to combine one of the dispersants reported by Suzuki into a dispersion taught by Bruxvoort. Further, even if one skilled in the art chose to combine one of the dispersants reported by Suzuki into a dispersion taught by Bruxvoort, there is no teaching or suggestion in either Suzuki or Bruxvoort concerning useful dispersant molecular weights or amine values as recited in Applicants’ claims.

In considering the combination of Bruxvoort with Suzuki, the Examiner again leaves the abrasive art and turns to the unrelated art of color filters. Suzuki reports a colored composition for the production of a color filter. The coating composition is reported to improve color pigment dispersion and insure excellent pattern reproducibility in a color filter (col. 1, lines 5-15). Suzuki disperses a variety of colored organic compounds as pigments, particularly isoindoline or isoindolinone pigments, in binders having specific chemical functionality. Other

pigments, including inorganic pigments, are mentioned in passing, however the role of the pigment is that of a colorant for the color filter and the metal oxides listed are those generally associated with the colorant art rather than abrasive art.

In contrast, Applicants' claimed invention concerns the abrasive arts and the dispersant is used to disperse superabrasive particles to obtain a desired mechanical effect in the abrasive article. There is simply no teaching or suggestion in Suzuki concerning the usefulness of a particular dispersant for superabrasive particles. For this reason alone, the rejection of claims 5 and 6 in view of Bruxvoort and Suzuki should be withdrawn.

Further, claims 5 and 6 specify that the dispersant comprise a polymer having a specified average molecular weight and a specified AV. Neither Bruxvoort nor Suzuki teach or suggest these additional criteria for selecting the dispersant. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 5 and 6 under 35 U.S.C. § 103.

V. Conclusion

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested. The Examiner is invited to contact Applicants' undersigned representative with any questions concerning the present application.

Respectfully submitted,

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Date

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